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hardy annual. This is not a solitary instance of this sort, but I do not remember to have seen any explanation of such facts.

H. F. BASSETT.

Waterbury, Conn.

Chilopoda Migrating in Broad Day-light.

SEVERAL years ago a friend of the writer saw, during late summer in Nebraska, a great number of some chilopod migrating in the day-time. They were all going in one direction across a road where they were readily seen, and continued to pass over it for more than a week. A very dry spell from which the country had been suffering may have had something to do with the movements of the animals, for they disappeared after a heavy rain. The fact that they were seen in large numbers, as well as their migrating in broad day-light, is very interesting, since none of the Chilopoda are usually seen in great numbers or where there is much light. Repeated questions, however, showed that the animals were some chilopod, probably a *Scolopendra*, since they were too large for a *Lithobius* and can scarcely have been a *Scolopocryptops*.

If any reader has ever seen any of the Chilopoda migrating at any time, or in very large numbers, he will confer a favor upon the writer at least by letting him know through the columns of *Science*, or by letter, the locality, season; state of weather, duration of migration and if possible the species observed.

F. C. KENYON.

College Hill, Mass.

A Miniature Water Lily.

IN reply to Prof. J. E. Todd's inquiry of Dec. 15, his Nymphaea found near Red Lake is very interesting, as it is undoubtedly *N. odorata* Ait., var. *Minor sims.*, and the location is between that reported by J. M. Macoun from Moose River, near James Bay, in 1885, and that reported by the Natural History and Geological Survey of Minnesota, in Turtle Lake, Otter Tail Co., Minn., in 1883.

H. B. AYRES.

Corn.—A Query.

LATE last fall a friend found a peculiar ear of corn growing in his garden. He had planted ordinary sugar corn and was much surprised to find an ear each grain of which had a distinct shuck, besides the ordinary shuck on the outside. The ear is of average size, although the cob is rather small. Similar corn had been exhibited at the county fair a few years before. Is this corn going back to some earlier form?

E. M. DANGLADE.

Vevay, Ind.

Rope of Maggots.

PROFESSOR WILLISTON, in his note, "An Explanation of the Rope of Maggots," remarks that the phenomenon has been but seldom observed in America, which leads me to give a couple of observations of my own, in Indiana. On the Campus of Purdue University is a hedge of Norway spruce, along one side of which is a drive, and on the other a walk of gravel and cinders, both raised somewhat above the level of the ground. On July 10, 1888, following a rainfall of 3 inches, vast numbers of these larvæ formed "ropes" covering a width of from one half to two inches, marching out from the hedge and following along the walk for a considerable distance, when they would return again to the hedge, crawling in and about the latter with seemingly no especial object in view, though it was here that the maximum in width of column of march was reached. There were several separate "armies," each following an independent winding course, but separated from each other by short distances. A considerable number were placed in a breeding jar on grassy sod, where they again took up

their line of march, forming a ring around the outer edge of the grassy disc. They continued to crawl around and around this edge for some time, forming a "rope" the size of one's finger.

On July 15, 1889, the day following a rainfall of 1.22 inches, I again witnessed a precisely similar phenomenon and in the exact locality on the walk where it had taken place the previous year. This appeared to me to indicate a tendency to local, permanent breeding places, the larvæ subsisting on decaying vegetation and in this case the foliage of the spruce. It would also appear that these larvæ had in each case been driven out of their quarters by the water collecting therein.

F. M. WEBSTER.

Wooster, Ohio.

BOOK REVIEWS.

Pain, Pleasure and Aesthetics. By HENRY RUTGERS MARSHALL. New York, Macmillan & Co. \$3.

THE object of this work is to present a theory of pain and pleasure, and from that as a basis to develop a philosophy of art. The author has evidently given a great deal of time and thought to his subject, and has made a careful study of the views of others, as well as of the psychological principles involved. Mr. Marshall begins his discussion by remarking on the difficulty of finding a word to designate both pleasure and pain, the word *feeling*, which some writers use, being, in his opinion, too varying and ambiguous in meaning, while *sensation* and *emotion* are not only ambiguous but much too narrow; hence he uses the compound word *pleasure-pain* as the only available term to cover the two kinds of phenomena in question while excluding everything else. He then proceeds to inquire what pleasures and pains in their nature are and how they are related to the other phases of consciousness. The common theory is that the states of consciousness that we call feelings, or pleasures and pains, are a distinct class of mental phenomena co-ordinate with thought and action yet inseparably connected with them. Mr. Marshall believes this to be an error, and maintains that they are *qualities* of the other states of consciousness, or, in his own words, "Pleasure-pain modes are *qualies* of all mental states: qualities, one of which must, and any of which may, belong to any element of consciousness" (p. 145). This theory he supports with many arguments, accompanied by criticisms of other views, and then enters on an elaborate discussion of the physical basis of pleasure and pain, to which we can only refer our readers, as it is much too difficult and detailed to be analyzed here. We find ourselves, however, unable to accept his theory of what pleasure and pain are, notwithstanding the considerations urged in its favor. That some feeling of pleasure or pain accompanies every mental state, whether thought, sensation, volition or any other, is undoubtedly true; but we cannot bring ourselves to regard the pleasure or pain as a quality of the given state. A pleasure generally accompanies a new thought; but the pleasure seems to be a distinct phase of consciousness rather than a quality of the thought itself. Nor can we regard the feeling of compunction which often attends the doing of a wrongful act as a quality of the act or of the moral judgment that reason passes upon the act. But the subject of the feelings is so difficult that the arguments of an intelligent thinker can hardly fail to be useful, whether one agrees with his views or not.

Mr. Marshall's theory of pain and pleasure, however, is only a part of the doctrine set forth in this book; he bases on it a theory of beauty and of the aims and motives of art. "The art impulse," he thinks, "is a blind impulse which leads men to create with little or no notion

of the end they have in view"; but that the end to which this impulse really leads is the attraction of other persons by pleasing them. It follows, therefore, that a work of art is to be estimated according to the pleasure it produces, or, as the author himself expresses it: "That object is to be considered beautiful which produces a psychoris that is permanently pleasurable in revival. Each pleasure may form an element of impression in an æsthetic complex; but only those pleasures are judged to be æsthetic which (relatively speaking) are permanently pleasurable in memory. . . . We are led also to the further conclusion that that object is to be considered ugly which produces a psychoris that is permanently disagreeable in revival" (p. 110). The pleasure which the beautiful object produces may be of any kind that has the quality referred to—that of being permanent in revival; and consequently men's judgments about what is beautiful will vary according to the kind of pleasure they most enjoy, or, in the author's words: "For each person the æsthetic field to which he refers in making judgments as to beauty is his relatively permanent pleasure-field of revival." From this theory it follows that the aim of the artist in his work should be to produce as great and as varied pleasures as possible unaccompanied by pain.

Now that the end at which art aims, or at least one of its ends, is what Aristotle called "noble pleasure" will be admitted by all, and the pleasures it produces are undoubtedly of the kind that Mr. Marshall refers to, but is it correct to say that all the pleasures that a work of art produces are due to its beauty? It seems to us, rather, that the pleasures produced by beauty are of a special kind, and that many of the pleasures that we experience in contemplating a work of art are due to other qualities than its beauty. A religious song, for

instance, may awaken religious emotion, and a patriotic song may awaken patriotic emotion, but these pleasures appear to be quite different from that produced in both cases by the beauty of the song, and it is obviously possible to have either of the former feelings when no beautiful object is present. Mr. Marshall's art theory, however, contains much that is true and valuable, and is worthy of attention from both artists and psychologists.

A Standard Dictionary of the English Language. Vol. I., quarto. New York, Funk and Wagnalls Company.

THE preparation of this dictionary was begun nearly four years ago, and it is expected that the work will be completed by the issue of the second volume in June of the present year. The editor-in-chief is Dr. Isaac K. Funk, the head of the firm that publishes it; the managing editor is Dr. D. S. Gregory, who has also had special charge of the definitions in philosophy and theology. Professor F. A. March has had charge of the spelling and pronunciation; and there have been, besides these, several assistant editors and many writers on special topics. The dictionary, when completed, will contain two hundred and eighty thousand words, which is a much larger number than is found in any other English dictionary, the Century Dictionary having only two hundred and twenty-five thousand, and other dictionaries a still smaller number. The dictionary will be issued in two volumes of over a thousand pages each, and also in a single volume; and it seems likely to take a prominent place among the word-books of the English language.

The dictionary has certain distinguishing features, some of which, we believe, are entirely original, and are deemed by the editors decided improvements. The most prominent of these, and the one on which the most stress is laid, is the practice of giving the most common meaning

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